

Claims

What is claimed is:

1. A color layer material onto which light is irradiated by a lighting system using a light emitting diode as a light source, the color layer material comprising:
 - a resin; and
 - a red color pigment having a particle diameter of 0.01 to 0.1 μm dispersed at a ratio of 5 to 10% in the resin.
2. A color filter substrate onto which light is irradiated by a lighting system using a light emitting diode as a light source and a red color layer is disposed on the substrate, the red color layer comprising:
 - a resin; and
 - a red color pigment having a particle diameter of 0.01 to 0.1 μm dispersed at a ratio of 5 to 10% in the resin.
3. A color filter substrate onto which light is irradiated by a lighting system using a light emitting diode as a light source and a red color layer is disposed on the substrate, wherein the color filter substrate has an average light transmittance of the color filter substrate is 3% or less in a wavelength band of 500 to 575 nm.
4. The color filter substrate of claim 3 wherein the average light transmittance of the color filter substrate is 2% or less in a wavelength band of 550 to 570 nm.

5. The color filter substrate of claim 4 wherein the light transmittance of the red color layer is 55% or greater in a wavelength of 600 nm.
6. A color filter substrate onto which light is irradiated by a lighting system using a light emitting diode as a light source and a red color layer is disposed on the substrate, wherein the color filter substrate has an x that ranges from 0.45 to 0.65 and a y that ranges from 0.28 to 0.33 in chromaticity coordinates of the light irradiated from the lighting system and passing through an area of the red color layer of the color filter substrate.
7. An electro-optic device comprising:
 - the color filter substrate according to claim 2;
 - a counter substrate disposed to face the color filter substrate;
 - an electro-optic material sandwiched between the color filter substrate and the counter substrate; and
 - a lighting system using a light emitting diode for irradiating light onto the color filter substrate and the counter substrate sandwiching the electro-optic material as a light source.
8. The electro-optic device according to claim 7, wherein the electro-optic material further comprises liquid crystal.

9. A fabrication method of a color filter substrate onto which light is irradiated by a lighting system using a light emitting diode as a light source and a red color layer is disposed on the substrate, the fabrication method comprising:

dispersing a red color pigment having a particle diameter of 0.01 to 0.1 μm at a ratio of 5 to 10% in a resin to form the red color layer.